

General comments

Description of files & naming convention in relation to data publication, in relation to the project deliverable D4.3 of the Horizon 2020 project “SURE” (grant nr. 654662). The data has additionally been used in the following journal publication:

Bakker & Barnhoorn, “Multiscale evaluation of potential damage in jetted laterals”, submitted to International Journal of Rock Mechanics and Mining Sciences (in review).

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All experiments were conducted at the Faculty of Geoscience and Engineering of TU Delft (web: <https://www.tudelft.nl/en/ceg/about-faculty/departments/geoscience-engineering/laboratory/>). Details on methods can be found in the report (project deliverable). Attached files are raw data files (format .csv) that can be opened with any text editor, or imported into excel, matlab etc. All files have headers where the appropriate unit of the data in that specific column can be found. All sensors have been calibrated to within 0.01% measurement error unless written otherwise. Further data on dimensions of samples and distance to the jetted borehole can be found in the tables below.

Samples used for Brazil Disk Experiments – Indirect Tensile Strength and Fracture Toughness

Files in folder: “GI_JettedAdjacent_Brazil”. Files are named GI_SJ_*.csv, where * is a placeholder for the specific sample code (see table 1).

Table 1, overview of Samples used for Tensile Strength and Fracture Toughness measurements

Sample code	Diameter [mm]	Length [mm]	Distance to jetted borehole [cm], +/-0.25
01C	28.10	15.00	3.5
01D	28.10	16.40	3.5
01E	28.10	15.40	3.5
01F	28.10	17.00	3.5
02C	28.55	16.35	6.6
02D	28.50	17.35	6.6
02E	28.55	14.30	6.6
02F	28.50	18.45	6.6
03C	29.15	15.65	9.7

03D	29.05	16.25	9.7
03E	28.90	16.35	9.7
03F	29.00	17.00	9.7
04C	29.60	15.60	5.2
04D	29.65	15.35	5.2
04E	29.60	16.60	5.2
04F	29.65	16.35	5.2
05C	29.65	15.60	9.1
05D	29.65	16.40	9.1
05E	29.65	17.00	9.1
05F	29.65	18.30	9.1
06C	29.25	15.40	6.5
06D	29.00	16.15	6.5
06E	29.10	15.65	6.5
06F	29.05	17.10	6.5
07C	29.30	14.95	3.6
07D	29.15	16.90	3.6
08C	29.25	15.60	6.7
08D	29.30	15.75	6.7
08E	29.20	15.60	6.7
08F	29.15	16.35	6.7
09C	29.30	15.70	9.8
09D	29.30	15.75	9.8
09E	29.25	15.05	9.8
09F	29.20	16.50	9.8
10C	29.10	15.70	5.5
10D	29.10	16.40	5.5
10E	29.10	15.55	5.5
10F	29.10	15.60	5.5
10G	29.10	16.05	5.5
11C	29.30	15.35	4.5
11D	29.20	17.15	4.5
11E	29.15	16.40	4.5
11F	29.25	15.05	4.5
11G	29.25	15.50	4.5
11H	29.15	17.15	4.5
12C	29.15	15.95	4.2
12D	29.15	15.85	4.2
12E	29.15	16.80	4.2
12F	29.15	16.70	4.2
12G	29.05	18.65	4.2
13C	29.30	16.00	9.2

13D	29.30	16.40	9.2
13E	29.25	15.65	9.2
13F	29.20	16.35	9.2
13G	29.20	16.00	9.2
14C	29.25	15.20	8.8
14D	29.20	16.35	8.8
14E	29.20	16.40	8.8
14F	29.15	16.80	8.8
14G	29.10	16.30	8.8
14H	29.05	17.90	8.8

Samples used for UCS and acoustic wave speeds

For UCS experiments, files are located in: “GI_JettedAdjacent_UCS”. Files are named GI_SJ_*.csv, where * is a placeholder for the specific sample code (see table 1).

Data files (waveforms) of acoustic measurements can be found in the folder “GI_JettedAdjacent_vpvs”. Files are named by the sample code, followed by an underscore and the specific measurement (_vp/_vsv/_vsh). These are binary files which can be opened, for example in matlab by:

```
fid=fopen(filename, 'r');
[A, datapoints]=fread(fid,6250000, 'int16');
fclose(fid);
```

All files have a “.par” file associated with it, this is a text file with numbers reflecting the settings of the oscilloscope. These are required as the waveform data does not have a time-array stored, and needs to be created to evaluate the data against time. The values in SUthe .par files in order of appearance are: Channel number, number of points of waveform, sensitivity (V/div), sampling rate (Hz), offset (V), timestep (sec/div) and a trigger delay (s).

Sample code	Diameter [mm]	Length [mm]	Distance to jetted borehole [cm], +/- 0.25
1A	76.30	28.40	3.5
1B	75.50	28.20	3.5
2A	76.60	28.70	6.6
2B	76.80	29.00	6.6
3A	74.35	29.35	9.7
3B	74.00	29.20	9.7
4A	74.40	29.60	5.2
4B	76.05	29.60	5.2
5A	72.50	29.60	9.1
5B	74.85	29.60	9.1
06A	74.45	28.95	6.5

06B	75.00	28.95	6.5
07A	73.25	29.00	3.6
07B	74.25	29.00	3.6
08A	74.85	29.25	6.7
08B	76.15	29.30	6.7
09A	74.40	29.30	9.8
09B	76.15	29.30	9.8
10A	75.60	29.15	5.5
10B	75.45	29.30	5.5
11A	72.50	29.15	4.5
11B	74.20	29.20	4.5
12A	75.80	29.05	4.2
12B	76.55	29.25	4.2
13A	75.10	29.30	9.2
13B	75.25	29.40	9.2
14A	74.30	29.05	8.8
14B	75.15	29.25	8.8

True-Triaxial testing data

Files are located in: "True_Triax_exps".

Filename Intact block: "SURE_LS_Intact_GI_20171003_151309.txt"

Filename Jetted block: "SURE_LS_Jetted_20171030_112542.txt"

Both text files have data columns with headers. Units are absent in headers, these are: kN for Force; and V for displacement. Displacement sensors are calibrated to 0.24 mm/V (with an alpha-95 prediction interval at +/- 0.007 mm/V).

For the jetted block, the borehole runs along the y-axis of the sample (i.e. from coordinates [15 0 15] to [15 30 15] with units in cm). Samples are cubic with dimensions: 30x30x30 cm, +/- 0.5 cm. Pistons are fitted with spherical seats to handle non-perfect plan-parallelism. To avoid point loading on sample edges, a thin plastic material is placed between piston and rock samples, such that the load is evenly distributed.

microCT data

Data from processed image slices is available in the folder: "microCT_data_processed".

Datafiles are in csv format with headers depicting the content. Original image slices can be requested by contacting the authors.